

Geologic Carbon Sequestration Opportunities for Maryland

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References:

Conn, Baum, Mudd, Gunnelfsen: Potential for Geologic Storage of CO₂ in Western Maryland — Phase I Studies, 2004.

Wickstrom et al, Characterization of Geologic Sequestration Opportunities in the MRCSP Region, Phase I report, 2010.

Multiple in draft / press, documents from the Mid-West Regional Carbon Sequestration Partnership and the Mid-Atlantic Offshore Carbon Sequestration Partnership

Evaluation of Opportunities



Geologic Setting

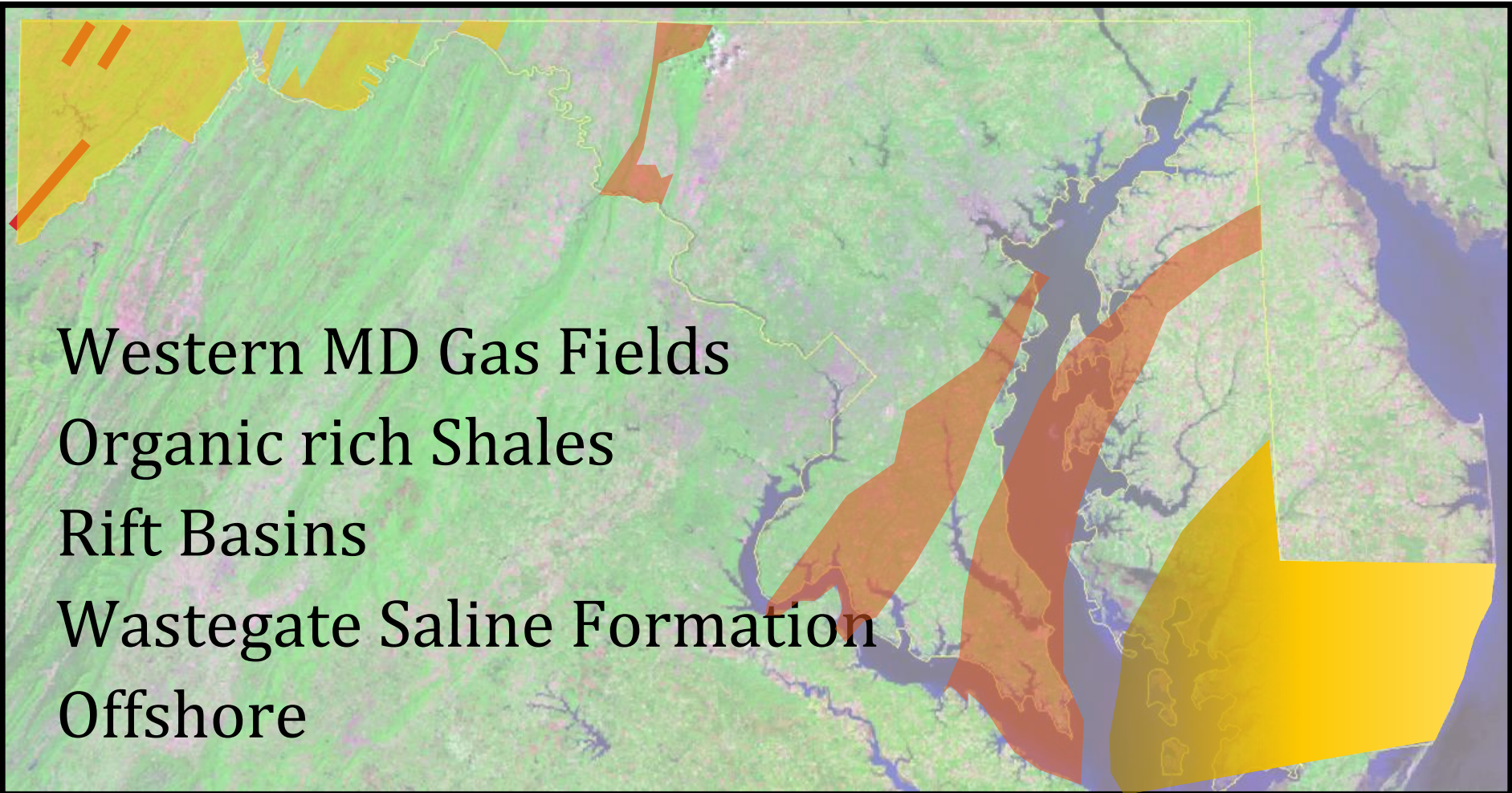
Risk

Scale (Porosity / Size of formation)

Distance to CO₂ Source

Economics

Maryland Geologic Opportunities

A map of Maryland with various geologic regions highlighted in yellow and orange. The highlighted areas include the western part of the state, the Patuxent River valley, and the coastal region. The text is overlaid on the left side of the map.

Western MD Gas Fields
Organic rich Shales
Rift Basins
Wastegate Saline Formation
Offshore

Western Maryland Gas Fields

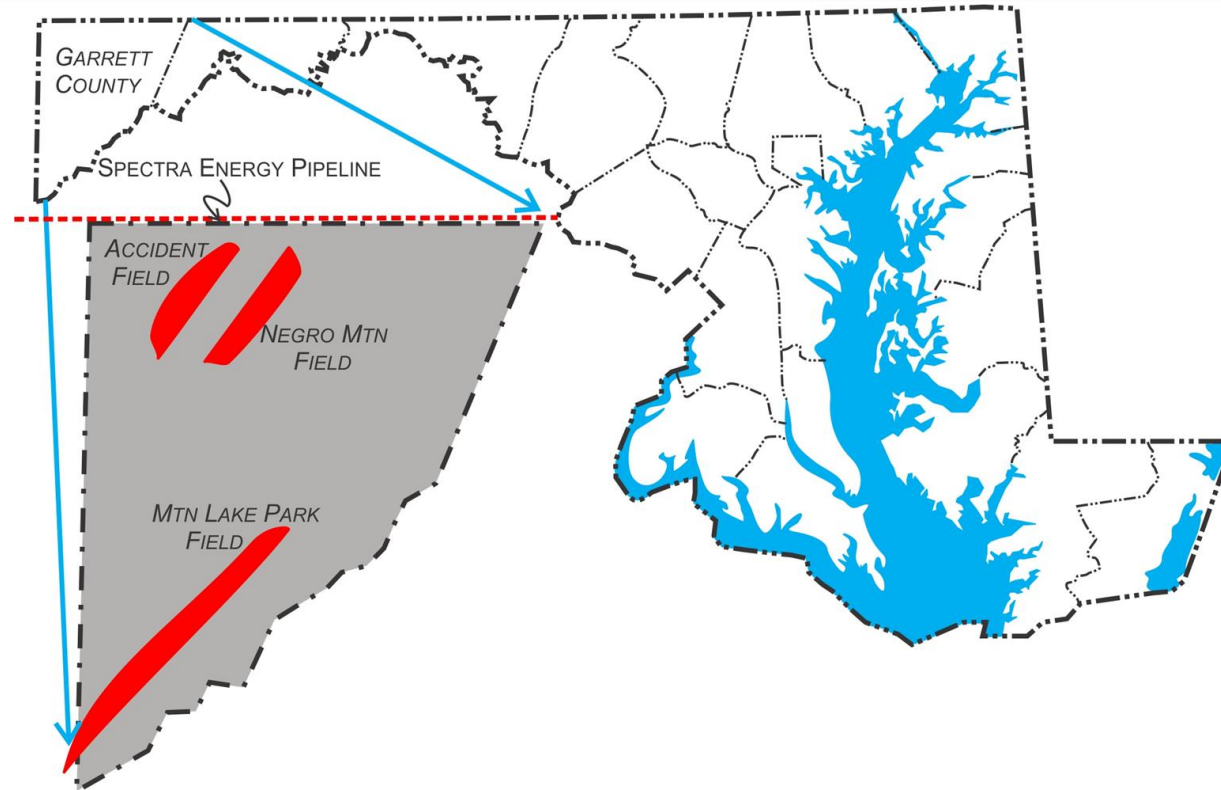


Oriskany sandstone

1 Gigaton CO₂
estimate

Potential Leakage in
Mountain Lake Park
Field

Competing interests

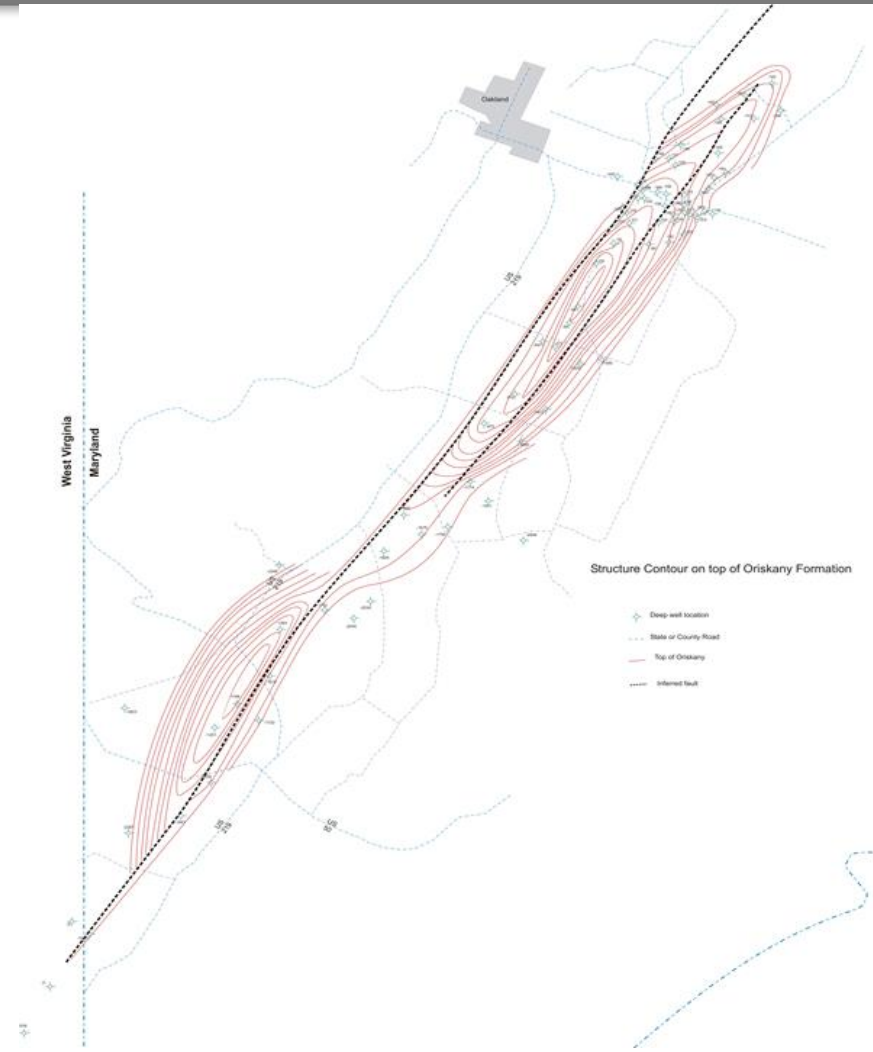


MountainLake Gas Field



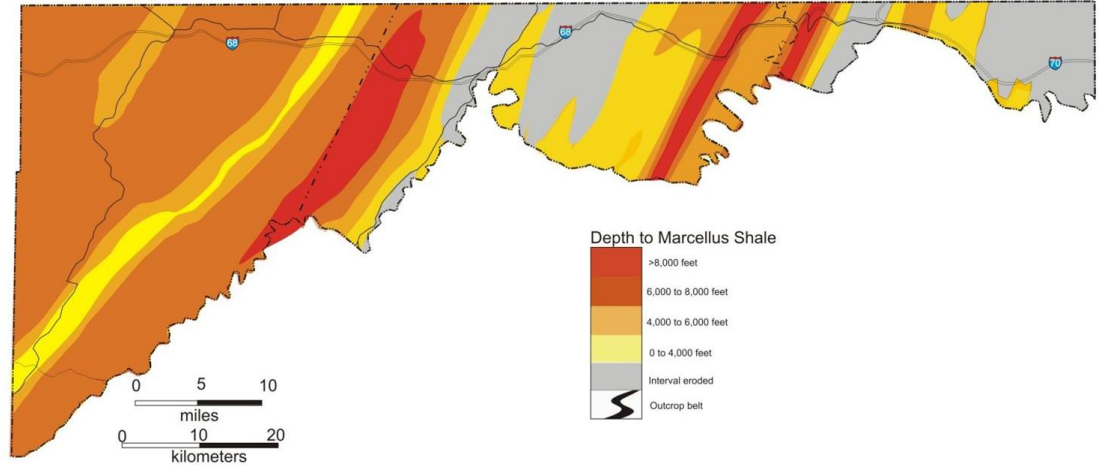
New Geologic Interpretation of Mountain Lake Park Field shows that it is two isolated fields.

Additional research is needed to determine cap rock structure above the fields and if the fields are isolated.



Organic Rich Shales

Organic rich shales (Marcellus and Utica) not only provide storage but also provide remineralization.



Not a current option for MD due to fracking moratorium, but is an option to export to Pennsylvania and West Virginia

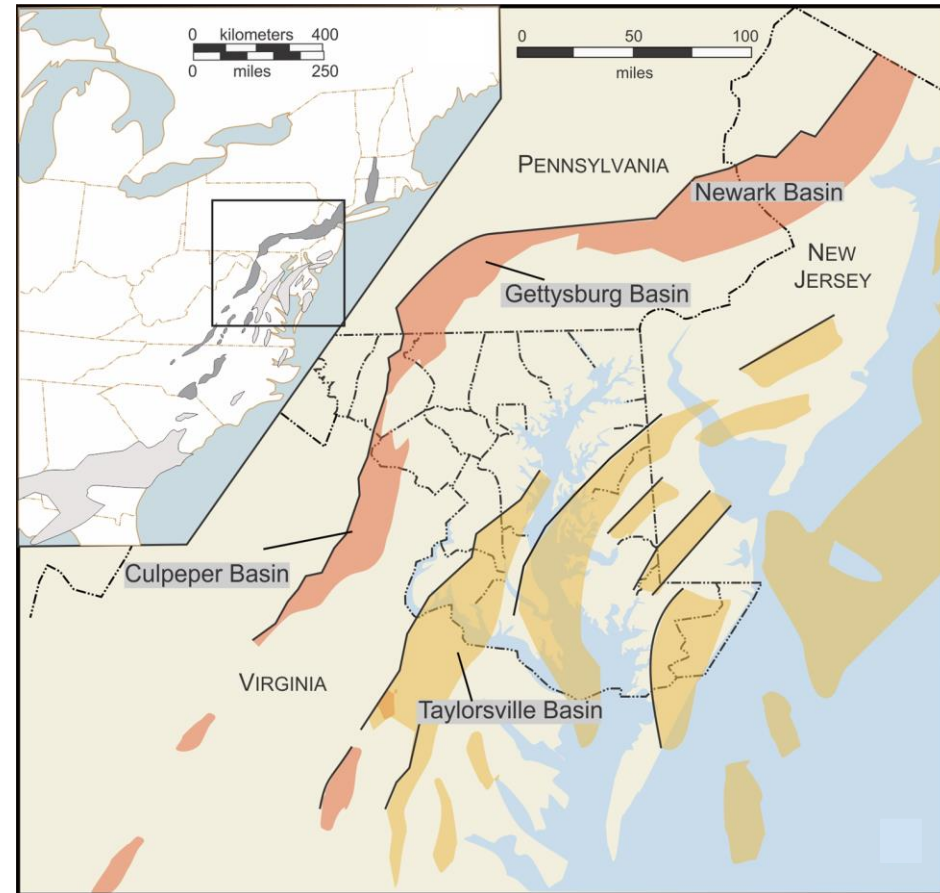
Triassic Rift Basins

Complex geologic nature.

More research needs to be performed to characterize these fields.

Good Location for coincident location of power plants.

Contain storage and remineralization capabilities

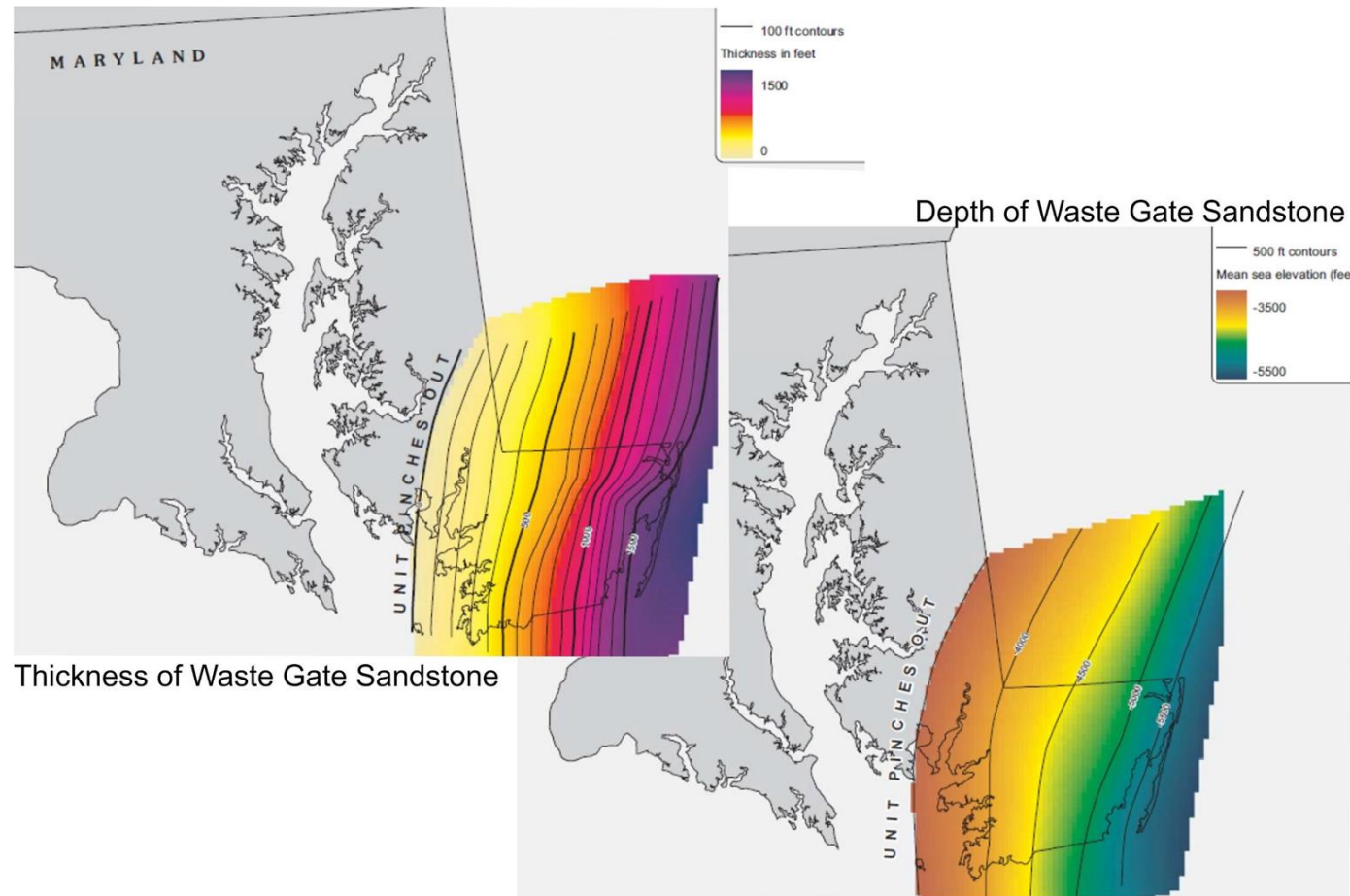


Wastegate Saline Aquifer / Formation



Formation with
brine water
(non potable)
below all other
aquifers

4.4 GT CO₂
storage
estimates in
MD

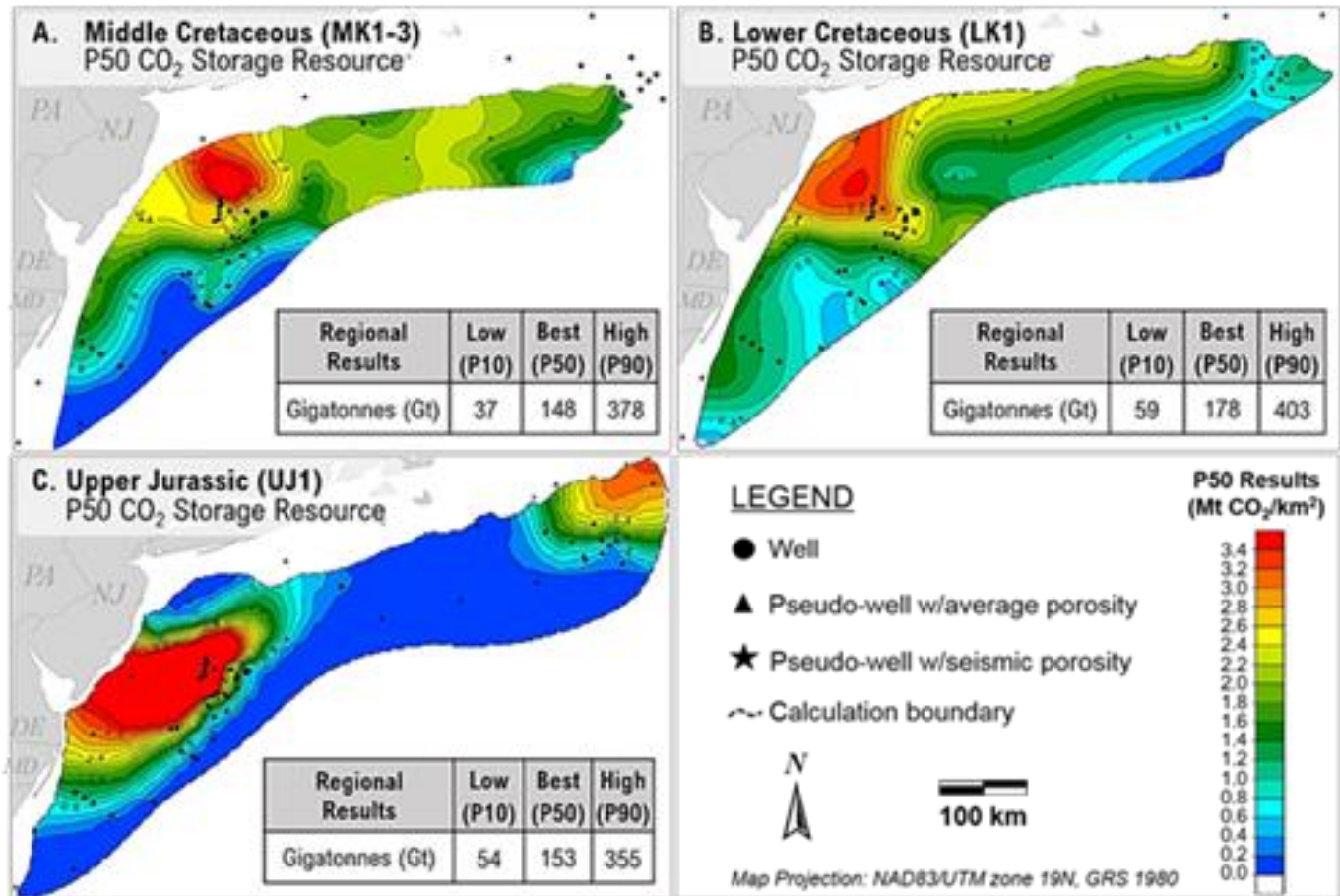


Offshore

Federal
Waters

450 GT
potential
(Region)

Pipeline
and
Underwater
injection



Maryland Geologic Opportunities

A map of Maryland and surrounding regions, including parts of Virginia, West Virginia, and Delaware. The map is overlaid with several colored regions: a large orange-shaded area in the western part of the state, a large yellow-shaded area in the eastern part, and a large red-shaded area in the central part. The text "Western MD Gas Fields", "Organic rich Shales", "Rift Basins", "Wastegate Saline Formation", and "Offshore" is overlaid on the map, primarily in the western and central regions.

Western MD Gas Fields
Organic rich Shales
Rift Basins
Wastegate Saline Formation
Offshore